

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of controlling a chemical mechanical polishing system, comprising:

receiving ~~an inner tolerance, an outer tolerance and a specification tolerance limit~~
plurality of tolerance limits;

~~receiving user input selecting one of the inner tolerance and the outer tolerance;~~

~~receiving user input selecting a polishing machine procedure for the selected tolerance;~~

polishing a first substrate with the chemical mechanical polishing system;

measuring a thickness of at least one layer in the substrate at an in-line metrology station;

and

~~if the measured thickness exceeds the selected tolerance, performing the selected procedure~~

determining which, if any, of the tolerance limits are exceeded by the thickness measured; and

if it is determined that any of the tolerance limits are exceed, selecting one of a plurality of procedures of the chemical mechanical polishing system, the selection being based on a result of the determining step.

2. (Currently Amended) The method of claim 1, wherein the ~~selected procedure~~plurality of procedures includes adjusting a polishing time of a second substrate from the same cassette as the first substrate.

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3. (Currently Amended) The method of claim 1, wherein the ~~selected procedure~~plurality of procedures includes adjusting a polishing time of a second substrate from a different cassette from the first substrate.

4. (Currently Amended) The method of claim 1, wherein the ~~selected procedure~~plurality of procedures includes displaying a warning message.

5. (Currently Amended) The method of claim 1, wherein the ~~selected procedure includes~~generating plurality of procedures includes designating a gating substrate in the next cassette.

6. (Original) A method of chemical mechanical polishing, comprising:
polishing a first substrate in a lot at a polishing station of a chemical mechanical polishing apparatus that includes an in-line metrology station;
measuring a thickness of at least one layer in the first substrate at the in-line metrology station; and
adjusting a polishing parameter based on the measurement of the first substrate; and
polishing a second substrate at the polishing station with the adjusted polishing parameter.

7. (Original) The method of claim 6, wherein the thickness of the at least one layer is measured while a third substrate is being polished, and the second substrate is polished after the third substrate.

8. (Original) The method of claim 6, wherein the polishing parameter is adjusted if the measured thickness exceeds a tolerance limit.

9. (Original) The method of claim 8, wherein the tolerance limit is entered by a user.

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10. (Original) The method of claim 6, wherein the polishing parameter is a polishing time.

11-16. (Cancelled)

17. (New) The method of claim 1, wherein the selection is based on which of the plurality of tolerance limits are exceeded.

18. (New) The method of claim 1, wherein the plurality of tolerance limits includes an inner tolerance limit, and outer tolerance limit, and a specification tolerance limit.

19. (New) The method of claim 1, wherein the first substrate is one of a plurality of wafer types, the method further comprising:

receiving information identifying the wafer type of the first substrate, wherein the selection is based on the wafer type of the first substrate.

20. (New) The method of claim 1, wherein the plurality of wafer types includes a gating wafer type, a monitor wafer type, a regular wafer type, and a user defined wafer type.

21. (New) The method of claim 1, wherein the plurality of procedures include predefined procedures.

22. (New) The method of claim 1, wherein the plurality of procedures include one of immediately stopping polishing and idling, completing polishing of substrates currently loaded in the chemical mechanical polishing system and then idling, completing polishing of substrates in a cassette currently loaded in the chemical mechanical polishing system and then idling, adjusting a polishing time for other substrates in the cassette, adjusting the polishing time of substrates in other cassettes, requesting operator approval prior to adjusting the polishing time,

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requesting operator approval prior to adjusting a polishing procedure, returning the first substrate to the polishing apparatus, designating a gating group, generating a warning message, and generating a status message.

23. (New) A chemical mechanical polishing system, comprising a controller configured to:

receive information specifying a wafer thickness;

determined which, if any of a plurality of tolerance limits are is exceeded by the wafer thickness; and

if any of the tolerance limits are exceeded, selecting a procedure of the system, the selection being based on which of the tolerance limits is exceeded.

24. (New) The system of claim 23, wherein the controller is further configured to:

receive information specifying a wafer type; and

the selection is further based on the wafer type specified.

25. (New) The system of claim 23, wherein the plurality of tolerance limits includes an inner tolerance limit, an outer tolerance limit, and a specification limit.

26. (New) The system of claim 23, wherein the wafer type is one of a gating wafer type, a monitor wafer type, a regular wafer type, and a user defined wafer type.

27. (New) A chemical mechanical polishing system, comprising a controller configured to:

receive information specifying a wafer thickness;

receive information specifying one of a plurality of wafer types;

determine if a tolerance limit is exceeded by the wafer thickness; and

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if the tolerance limit is exceeded, selecting a procedure of the system, the selection being based on the wafer type specified.

28. (New) The system of claim 27, wherein the plurality of wafer types includes a gating wafer type, a monitor wafer type, a regular wafer type, and a user defined wafer type.

29. (New) The system of claim 27, wherein there are more than one tolerance limits and the selection is further based on which tolerance limit is exceeded.

30. (New) The system of claim 29, wherein the tolerance limits include an inner tolerance limit, an outer tolerance limit, and a specification tolerance limit.
